

WRITING A SURVEY REQUEST

Prior to writing a **survey request** (see **page 2-3**) be sure to field review the project. Look for areas that may be a problem due to lack of drainage, vision, etc. In those areas, you may need the Survey Crew to pick up additional topographical information and extra sections.

Note the datum and Coordinate System that is used, also the county combination factor (**See pages 2-5 and 2-6**). Do you need GPS? When we do our fieldwork all of our data except section corners are collected in ground coordinates (N & E). Section corner work is collected in grid coordinates (Y & X).

NOTE: There are no combination factors for the Wisconsin County Coordinate System.

Alignment

On projects where right of way acquisition is anticipated, the alignment has to be tied to the Wisconsin State Plane Coordinate System or the Wisconsin County Coordinate System. To reestablish the centerline of the existing roadway the Survey Crew ties in two points on each tangent. If the intent is to tie in to the stationing shown on the as-built plan the crew will try to use the same degree of curve shown on the plan. Let the Survey Unit know what point you want to hold for stationing (PI, PT, PC, etc.). After the field data has been collected for all the tangent points the information is given to the Survey Unit office staff so that the alignment data can be completed. That information is then given to the field crew in ground (N & E) coordinates for the applicable stations and then they will run in the remaining alignment.

Cross-Sections

Give specific limits of the area you want sectioned, i.e. 20m sections from station 0+000 to station 10+000, 40m left and right; or 50' sections from station 0+00 to station 100+00, 100' left and right. Side road sections are typically taken 90m - 150m or 300' - 500' back from each side road intersection. Again indicate the limits and the internal of the sections on your survey request. The Survey Crew will also provide a profile of the side road that extends 60m - 90m or 200' - 300' beyond the cross section limits. If requested, include a request for sections to be taken on all cross drain pipes on the mainline if necessary. Also indicate which format you prefer to have the final data in, see the Survey Unit staff if you have any questions regarding data formats.

Topography

Again, state the limits of your request. The mapping received for all "PX" & "P" mapping projects includes all above ground features. The Survey Crew will pick up all underground information such as utilities, septic systems, wells, pipes, etc. Also include scale of plan for topography.

Writing a Survey Request - continued

Levels

In most cases the Survey Unit will provide benchmark elevations. If the project is in close proximity to another project with established benchmarks the Survey Crew may use those benchmarks. Survey will provide benchmark descriptions, most of which will be tied to fire numbers since typically the alignment has yet to be established. If station ties are necessary the designer should specifically request that information.

Section Corners

All Section Corner requests should be reviewed by the Right of Way Unit **prior** to submittal to the Survey Unit. The determination of the Section Corners necessary for the project should occur at the earliest possible point in the process. Once that determination is made the Survey Unit will check to see how many corners are already in and how many need to be set. If Section Corners need to be set the Survey Unit will establish a consultant contract with a Registered Land Surveyor for this work. The contract will also include the work necessary to tie the existing corners into the State Plane Coordinate System or County Coordinate System.

Structure Survey

Indicate if the survey request is for a project involving the replacement of an existing structure. Additional sections are needed in that area so the designer can develop a contour map of the structure site. If you are working on a project that has "PX" mapping ask technical services for additional sections in that area. Indicate whether topographical information is needed. The ***Stream Crossing Structure Survey Report***, that is required as part of the Central Office Bridge Report submittal, lists the instructions for structure survey. Review this information prior to completing your survey request.

Right of Way

To stake the R/W, either for appraisals or permanent R/W monumentation, ground (N & E) coordinate information should be provided in both electronic ASCII and hard copy formats, including the point numbers and N, E coordinates. The Survey Crew will also need a "D" size plat with all R/W & TI break points labeled with numbers correlating to the coordinates in the electronic and hard copy files. Do not use duplicate or alphanumeric numbers. If you have questions talk to the Survey Unit staff. If the R/W changes after the original submittal of this information be sure to notify the Survey Unit.

FIELD SURVEY REQUEST

Project Location:		
County:	Highway:	Project ID:
Requested by:	Phone:	Date:
Requested Completion Date:		

Survey Information Needed

Survey info needed	Location(s)	Describe in detail what you want
Stake new alignment(s)		
Cross-sections (including driveways & pluses)	Sta. _____ to Sta. _____ every _____ feet, _____ ft LT and _____ ft RT	include: entrances, at pipes, elev of pipes, other pipe sizes, Drainage Ditches, Abrupt changes in topography
Topography (septic, wells, etc.)		Include: signs, utilities, fences, driveways, fire numbers
Stake new R/W		
Locate Utilities:		
Stake Rock Borings Locations		
Inlet & M.H. Elevation		
B.M. Description		
Structure Survey		
Section Corners		
Misc. Survey		

Attachments: (X) those that are included:

___ WCCS	___ County Map	___ Electronic data
___ State Plane Coordinates	___ Plat book map	___ Project Plan Sheets
___ NAD Horizontal	___ Other location maps	___ Copies of letters sent to property owners
___ NAD Vertical	___ Property owners have been notified of the survey activity	

Called Diggers Hotline Initials	in-house design project
Design CAICE Project Name:	consultant design project
(X) units that apply ___ English ___ Metric	consultant survey
Survey Field Coordinator:	Date Received:
Priority: H M L	Field Note Disposition Date:
Crew Chief Signature:	Date Completed:



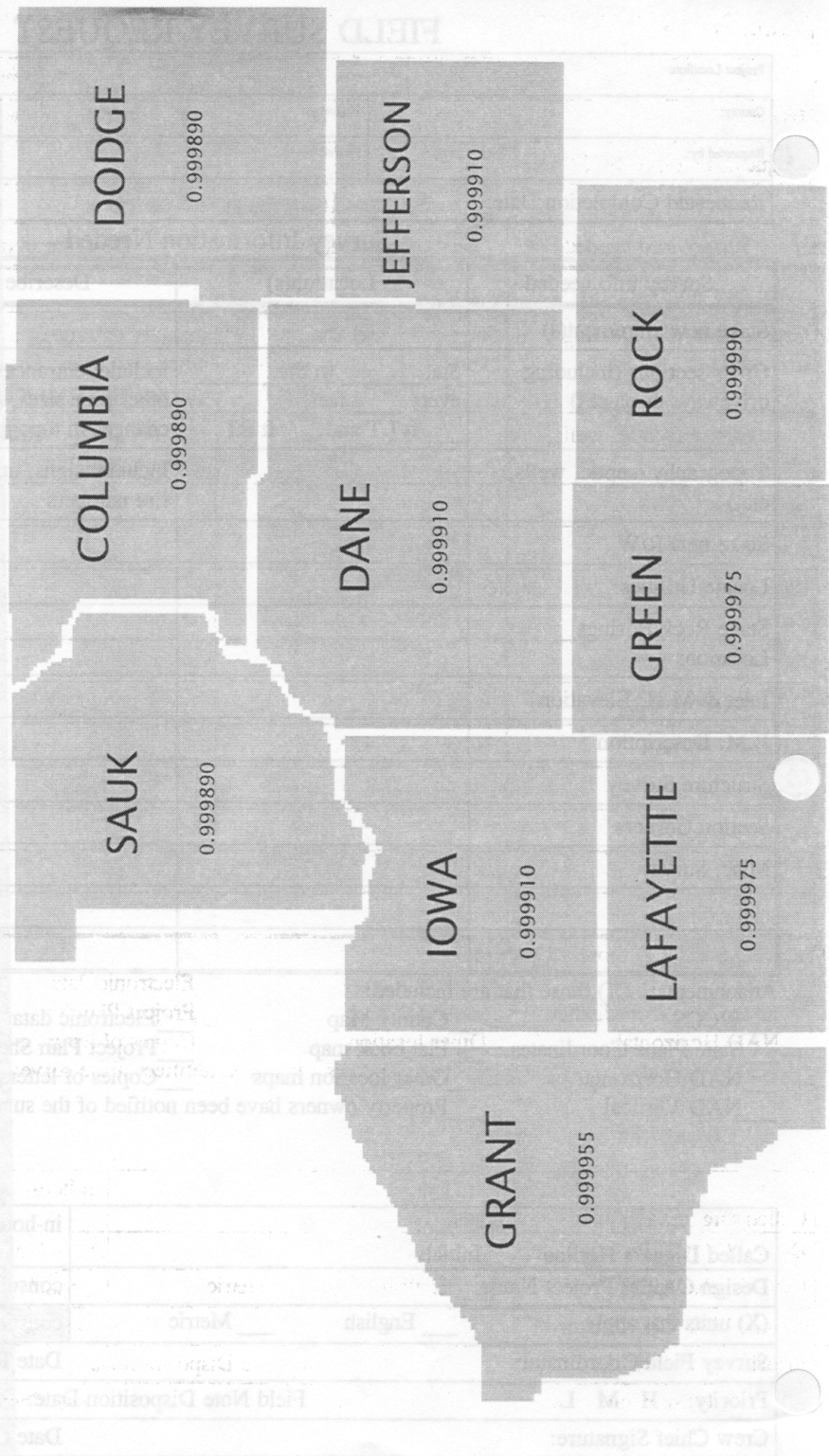
Datums and Reference Networks in Wisconsin

<i>Datum</i>	<i>Reference Network</i>	<i>Comments</i>
NAD 27	National Geodetic Reference System (NGRS)	
NAD 83 (1986)	National Spatial Reference System (NSRS)	Original NAD 83 readjustment; Does not include GPS observations
NAD 83 (1991)	Wisconsin High Accuracy Reference Network (WI HARN)*	Incorporates 80 new stations; new Stations and 18 existing NGS stations are GPS observed
NAD 83 (1997)	Wisconsin High Accuracy Reference Network (WI HARN)	Reobserved and readjusted state network

*Previously known as the *Wisconsin High Precision Geodetic Network (WHPGN)*

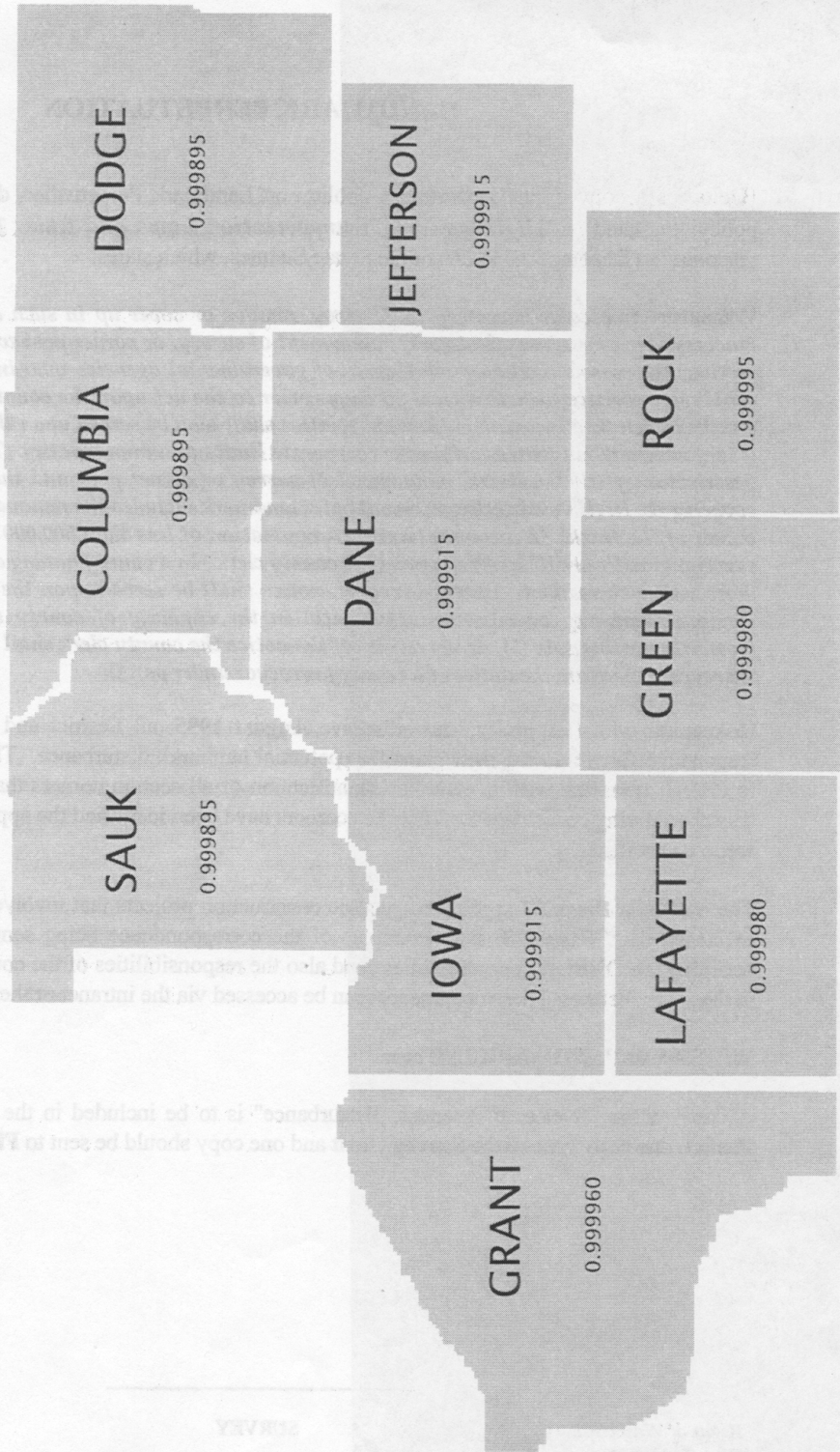
COMBINATION FACTORS

NAD 27



COMBINATION FACTORS

NAD 83 (91)





Wisconsin County Coordinate System NAD 83 (1991)

59 zones covering 72 counties

Conic or cylindrical projection

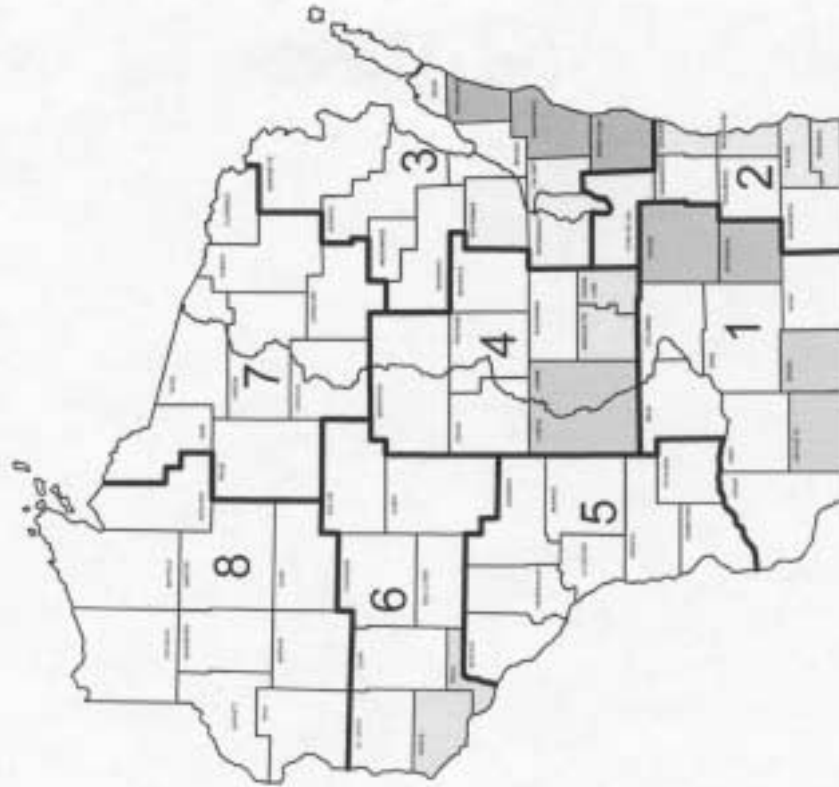
Each uses a "raised" ellipsoid

Maximum ratio:

(grid to ground)

1/30,000 rural

1/50,000 urban



For more information visit the
Wisconsin State Cartographer's
Office web page at
<http://www.geography.wisc.edu/sco>

LANDMARK PERPETUATION

Below is a copy of the Department's policy on Landmark Perpetuation dated June 1, 1992. This policy, as stated in "**Highway and Transportation Laws and Rules 1993**", was established in response to Chapter 59.635 (2A) of the State Statutes, which states:

Whenever it becomes necessary to destroy, remove or cover up in such a way that will make it inaccessible for use, any landmark, monument of survey, or corner post within the meaning of this section, the person including employees of governmental agencies who intend to commit such act shall serve written notice at least 30 days prior to the act upon the county surveyor of the county within which the landmark is located. Notice shall also be served upon the city or village engineer if the landmark is located within the corporate limits of a municipality. The notice shall include a description of the landmark, monument of survey or corner post and the reason for removing or covering it. In this subsection, removal of a landmark includes the removal of railroad track by the owner of the track. In a county having a population of less than 500,000 where there is no county surveyor, notice shall be served upon the county clerk. In a county having a population of 500,000 or more where there is no county surveyor, notice shall be served upon the executive director of the regional planning commission, which acts in the capacity of county surveyor for the county. Notwithstanding sub. (3), upon receipt of the notice the county clerk shall appoint a registered land surveyor to perform the duties of a county surveyor under par. (b).

In keeping with this policy, and effective **August 1995**, all District and Consultant designers are responsible for reviewing their plans for potential landmark disturbance. The review, occurring prior to PS&E submittal, will involve the identification of all section corners that have the potential to be disturbed during construction. After the corners have been identified the applicable county or counties are to be notified.

The notice on **Page 2-9** applies to specific construction projects that involve the potential disturbance of landmarks. **Page 2-10** is an example of the correspondence being sent to the county surveyors outlining the District's responsibilities and also the responsibilities of the counties as they are set forth in the State Statutes. These documents can be accessed via the intranet or the LAN as follows:

W:\TSS\RW\LANDMARK\LMForm

A copy of the "Notice of Potential Disturbance" is to be included in the **Construction Engineers Packet**, one copy goes to the **Survey Unit** and one copy should be sent to **Files**.

NOTICE OF POTENTIAL DISTURBANCE

Return Completed Form By: _____

County: _____
County Surveyor: _____
Address: _____
Phone: _____

To: Steve Marty
c/o WisDOT
2101 Wright Street
Madison, WI 53704
(608) 246-7918

Project I.D. _____

Related Project I.D.'s _____

Hwy Number: _____

Proposed Project Start Date: _____

Specific Project Limits: _____

Length of Project: _____

Proposed Improvement Type: _____

LANDMARKS IN POSSIBLE DANGER

<u>TOWN</u>	<u>RANGE</u>	<u>SECTION CORNER OR OTHER LANDMARKS</u>
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<u>WITNESS MONUMENTS ** ESTABLISHED</u> (ATTACH TIE SHEETS)
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If, after your investigation, you find a landmark to be clear of possible damage, or if you find additional landmarks that have not been considered, please inform WISDOT.

PROJECT MANAGER: _____ PHONE: _____

DATE REQUESTED: _____

**** To be completed by the County Surveyor or appointed registered land surveyor.**
Refer to State Statute 59.635 or WISDOT "Policy on Perpetuation of Landmarks" dated June 1, 1992.

It is the policy of the WISDOT (Wisconsin Department of Transportation) to take all reasonable measures to perpetuate survey landmarks. Therefore, we will make all efforts to insure that previously recorded landmarks of government surveys or surveys of public record are preserved.

Prior to construction projects, the WISDOT District office will send a "Notice of Potential Disturbance" to area counties describing the possibility of disturbing landmarks in the area. This notice will be the **30-day written notice to the county required by State Statute 59.635(2A)**.

Upon receipt of such notice, the **county is to abide by statute 59.635(2B)**, which requires the county, or their designee, to inspect the landmarks in question and establish **witness monuments** where the acting County Surveyor deems necessary. Witness monuments must be used in accordance with the above statute or the WISDOT Facilities Development Manual. Witness monuments are meant to be used to reestablish the location of a landmark after construction has taken place. The witness **monuments should be placed outside the grading limits** if a project has earthwork involved. Any further questions on grading limits can be referred to the project manager listed at the end of the "Notice of Potential Disturbance".

Upon completion of a highway project WISDOT will, if requested, reset the appropriate monument in the original location. WISDOT will notify the county of the type of monument that was reset. WISDOT will **not certify** these landmarks. Our intent is only to inform the county that certain evidence of a landmark was found, and that it was necessary to remove and reset a landmark at that location. It is up to the respective county to determine if a landmark should be certified.

WISDOT must have responses from the counties not later than 30 days prior to the proposed construction start date. **The response should contain a list of the monuments in jeopardy and those to be perpetuated, including applicable tie sheets.**